

Application Serial No. 09/670,295

IN THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the above-referenced application:

1. (Previously presented) A method for securely transcoding data from a content provider for use by a client device, comprising the steps of:

generating a plurality of data components at the content provider, the components being a decomposition of the data;

encrypting each of the data components;

transmitting the encrypted data components from the content provider to a transcoding proxy;

transcoding, at the proxy, the encrypted data components;

selectively manipulating the transcoded encrypted data components; and

transmitting the manipulated transcoded data components generated by the transcoding proxy to the client device;

wherein the steps of transcoding and manipulating the encrypted data components are performed without a need for first decrypting the encrypted data components.

2. (Original) The method of Claim 1, wherein the data is a multimedia object.

3. (Original) The method of Claim 2, wherein the multimedia object is selected from the group consisting of a text page, an image, audio, video, relational data, an XML document, and a hybrid object, the hybrid object being a combination of multimedia objects.

4. (Original) The method of Claim 1, wherein the step of transmitting the encrypted data components to the transcoding proxy further comprises the steps of:

assembling, at the content provider, at least one message, the message including at least one encrypted component portion; and

transmitting the at least one message to the transcoding proxy.

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5. (Original) The method of Claim 4, further comprising the step of extracting, at the transcoding proxy, the at least one encrypted component portion from the at least one message received by the transcoding proxy.

6. (Original) The method of Claim 1, wherein the step of selectively manipulating the transcoded data components at the proxy further comprises the step of filtering the transcoded components by dropping at least one of the encrypted data components.

7. (Original) The method of Claim 1, wherein the step of selectively manipulating the transcoded data components at the proxy further comprises the step of filtering the transcoded components by substituting alternative data for at least one of the encrypted data components.

8. (Original) The method of Claim 1, wherein the step of transmitting the manipulated transcoded data components to the client device further comprises the steps of:

assembling, at the transcoding proxy, at least one message including at least one manipulated component portion; and

transmitting the at least one message to the client device.

9. (Original) The method of Claim 8, further comprising the steps of:

extracting, at the client device, the at least one manipulated component portion from the at least one message received by the client device;

decrypting the at least one manipulated component portion; and

reassembling a transcoded representation of the data from the at least one decrypted component portion.

10. (Original) The method of Claim 1, further comprising the step of annotating at least one of the data components with metadata, the metadata providing a semantic understanding of the data components.

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11. (Original) The method of Claim 10, wherein the annotating step comprises creating a non-encrypted clear-text metadata header.

12. (Original) The method of Claim 11, wherein the clear-text metadata header includes at least one label that uniquely identifies a data component.

13. (Original) The method of Claim 11, wherein the clear-text metadata header includes information describing a priority associated with at least one data component.

14. (Original) The method of Claim 11, further comprising the steps of:

assembling at least one message combining the clear-text metadata header and at least one encrypted data component; and

transmitting the at least one assembled message to the transcoding proxy.

15. (Original) The method of Claim 14, further comprising the steps of:

disassembling, at the transcoding proxy, the at least one assembled message to extract the clear-text metadata header and the at least one encrypted data component from the message; and

selectively manipulating the at least one encrypted data component in accordance with metadata information obtained from the at least one clear-text metadata header.

16. (Original) The method of Claim 15, further comprising the steps of:

assembling, at the transcoding proxy, at least one transcoded message combining the clear-text metadata header and the at least one manipulated encrypted data component; and

transmitting the at least one transcoded message to the client device.

17. (Original) The method of Claim 16, further comprising the steps of:

disassembling the at least one transcoded message received by the client device to extract the clear-text metadata header and the at least one manipulated encrypted data component;

decrypting the at least one manipulated data component; and

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reassembling a transcoded representation of the data from the at least one decrypted manipulated data component.

18. (Original) The method of Claim 11, further comprising the steps of:

creating a second version of the clear-text metadata header; and
encrypting the second version of the clear-text metadata header.

19. (Original) The method of Claim 18, further comprising the steps of:

assembling at least one message comprising the clear-text metadata header, the encrypted second version of the clear-text metadata header and at least one encrypted data component; and

transmitting the at least one assembled message to the transcoding proxy.

20. (Original) The method of Claim 19, further comprising the steps of:

disassembling the at least one assembled message received by the client device to extract the clear-text metadata header, the encrypted second version of the clear-text metadata header and at least one manipulated encrypted data component;

decrypting the encrypted second version of the clear-text metadata header;

decrypting the at least one manipulated encrypted data component; and

reassembling a transcoded representation of the data from the at least one decrypted manipulated data component.

21. (Original) The method of Claim 20, further comprising the step of comparing the decrypted second version of the clear-text metadata header received by the client device to the clear-text metadata header to detect tampering with the clear-text metadata header.

22. (Original) The method of Claim 20, further comprising the step of comparing information included in the decrypted second version of the clear-text metadata header to the at least

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one manipulated decrypted data component to detect tampering with the at least one manipulated decrypted data component.

23. (Original) The method of Claim 1, further comprising the step of compressing at least one data component prior to encryption of the component.

24. (Original) The method of Claim 23, further comprising the step of decompressing, at the client device, the at least one data component subsequent to decryption of the component.

25. (Original) The method of Claim 1, wherein the step of generating the data components comprises decomposing the data into a plurality of mutually exclusive components corresponding to a non-overlapping partitioning of the data.

26. (Previously presented) A system for securely transcoding multimedia data comprising:
at least one content provider, the content provider generating a plurality of components from said multimedia data and encrypting each of the plurality of components;

at least one transcoding proxy operatively connected to the at least one content provider, the transcoding proxy receiving at least one encrypted component from said content provider and selectively manipulating the at least one encrypted component; and

at least one client device operatively connected to the at least one transcoding proxy, the at least one client device receiving and decrypting the at least one manipulated encrypted component, and reassembling a transcoded version of the multimedia data from the at least one manipulated decrypted component;

wherein the at least one transcoding proxy is operative to selectively manipulate the at least one encrypted component without a need for first decrypting the at least one encrypted component.

27. (Original) The system of Claim 26, whereby the transcoding proxy selectively manipulates the at least one encrypted component in accordance with priority information associated

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with each of the components, the priority information describing at least one of an absolute importance of a corresponding component and a relative importance of a corresponding component with respect to another component.

28. (Currently amended) An apparatus for securely transcoding multimedia data for use by a client device, the apparatus comprising:

at least one transcoding proxy couplable connecting to at least one content provider, the content provider generating a plurality of components from the multimedia data and encrypting each of the plurality of components, the at least one transcoding proxy receiving at least one encrypted component from the content provider and being operative: (i) to transcode the at least one encrypted component; and (ii) to selectively manipulating manipulate the at least one transcoded encrypted component, the transcoding and manipulating of the at least one encrypted component being performed without a need for first decrypting the at least one encrypted component;

wherein the at least one transcoding proxy is configurable for transmitting operative to transmit the at least one manipulated encrypted transcoded component to the client device.